

AMENDMENTS TO THE CLAIMS

1. (currently amended) A method of identifying individuals predisposed to major depressive disorder comprising:

- a) providing a nucleic acid from a Caucasian female human subject; wherein said nucleic acid comprises an adenylyl cyclase type 7 allele;
- b) detecting the presence of an [AACA]₇ repeat ~~at least one~~ polymorphism within the 3' untranslated region of said adenylyl cyclase type 7 allele; and
- c) correlating the presence of said ~~at least one~~ [AACA]₇ repeat polymorphism with a predisposition to major depressive disorder.

2-5. (canceled)

6. (original) The method of Claim 1, wherein said subject is alcohol-dependent.

7. (original) The method of Claim 1, wherein said detecting step is accomplished using at least one technique selected from the group consisting of polymerase chain reaction, heteroduplex analysis, single stand conformational polymorphism analysis, ligase chain reaction, comparative genome hybridization, Southern blotting and sequencing.

8. (original) The method of Claim 1, wherein said nucleic acid from said subject is derived from a sample selected from the group consisting of buccal cells, biopsy material and blood.

9. (currently amended) The method of Claim 1, further comprising step d) providing a diagnosis to said subject based in part on the presence or absence of said [AACA]₇ repeat polymorphism.

10. (original) The method of Claim 9, wherein said diagnosis differentiates major depressive disorder from other forms of mental illness.

11. (original) The method of Claim 10, wherein said other forms of mental illness comprise bipolar disorder.

12. (original) The method of Claim 10, further comprising step e) recommending an antidepressant drug to said subject.

13-25. (canceled)

26. (currently amended) A method of identifying individuals predisposed to major depressive disorder, comprising:

- a) ~~providing~~ detecting the presence of an [AACA]₇ repeat polymorphism within the 3' untranslated region of an adenylyl cyclase type 7 allele of a nucleic acid sample from a Caucasian female human subject, said sample containing an adenylyl cyclase type 7 allele;
- b) correlating the ~~identity~~ presence of said ~~adenylyl cyclase type 7 allele~~ [AACA]₇ repeat polymorphism with a predisposition to major depressive disorder.

27. (currently amended) The method of Claim 26, wherein said ~~identity of said adenylyl cyclase type 7 allele~~ detecting step is accomplished using at least one technique selected from the group consisting of polymerase chain reaction, heteroduplex analysis, single strand conformational polymorphism analysis, ligase chain reaction, comparative genome hybridisation, Southern blotting and sequencing.

28. (original) The method of Claim 26, wherein said nucleic acid sample from said subject is selected from the group consisting of buccal cells, biopsy material and blood.

29. (currently amended) The method of Claim 26, further comprising step c) providing a diagnosis to said subject based in part on the ~~identity of said adenylyl cyclase type 7 allele~~ the presence or absence of said [AACA]₇ repeat polymorphism.

30. (original) The method of Claim 29, wherein said diagnosis differentiates major depressive disorder from other forms of mental illness.

31. (original) The method of Claim 30, wherein said other forms of mental illness comprise bipolar disorder.

32. (original) The method of Claim 30, further comprising step d) recommending an antidepressant drug to said subject.

33. (new) The method of Claim 1, wherein said 3' untranslated region of said adenylyl cyclase type 7 allele comprises a nucleic acid fragment corresponding to nucleotides 5684 to 6062 of SEQ ID NO:1.

34. (new) The method of Claim 26, wherein said 3' untranslated region of said adenylyl cyclase type 7 allele comprises a nucleic acid fragment corresponding to nucleotides 5684 to 6062 of SEQ ID NO:1.